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Search Results - Record(s) 1 through 11 of 11 returned.

☐ 1. Document ID: US 20030217195 A1

Using default format because multiple data bases are involved.

L5: Entry 1 of 11

File: PGPB

Nov 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030217195

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030217195 A1

TITLE: Method and apparatus for managing host-based data services using CIM providers

PUBLICATION-DATE: November 20, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|-----------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Cao, Lanshan | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 719/330; 709/223, 719/321

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|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Drawings |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 2. Document ID: US 20030204557 A1

L5: Entry 2 of 11

File: PGPB

Oct 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030204557

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030204557 A1

TITLE: Method and apparatus for managing remote data replication using CIM providers in a distributed computer system

PUBLICATION-DATE: October 30, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|--------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |

| | | | |
|--------------------|-----------|----|----|
| Cao, Lanshan | Andover | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |

US-CL-CURRENT: 709/202; 707/204

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 3. Document ID: US 20030172088 A1

L5: Entry 3 of 11

File: PGPB

Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030172088
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030172088 A1

TITLE: Method and apparatus for managing a data imaging system using CIM providers
in a distributed computer system

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|------------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Cao, Lanshan | Andover | MA | US | |
| France, Jonathan C. | Somerville | MA | US | |
| Du, Yuantai | Nashua | NH | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 707/200

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 4. Document ID: US 20030105840 A1

L5: Entry 4 of 11

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030105840
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030105840 A1

TITLE: Method and apparatus for managing configuration information in a distributed
computer system

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|----------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Musante, Mark J. | Westford | MA | US | |

| | | | |
|--------------------|------------|----|----|
| Wagener, Peter J. | Somerville | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |

US-CL-CURRENT: 709/220; 709/223

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

☐ 5. Document ID: US 20030088713 A1

L5: Entry 5 of 11

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030088713
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030088713 A1

TITLE: Method and apparatus for managing data caching in a distributed computer system

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|------------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Musante, Mark J. | Westford | MA | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |
| Goosey, Melora L. | Andover | MA | US | |

US-CL-CURRENT: 719/328

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

☐ 6. Document ID: US 20030084198 A1

L5: Entry 6 of 11

File: PGPB

May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030084198
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030084198 A1

TITLE: Method and apparatus for managing data services in a distributed computer system

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|----------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Musante, Mark J. | Westford | MA | US | |

| | | | |
|--------------------|------------|----|----|
| Wagener, Peter J. | Somerville | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |
| Goosey, Melora L. | Andover | MA | US |

US-CL-CURRENT: 719/316

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 7. Document ID: US 20030084116 A1

L5: Entry 7 of 11

File: PGPB

May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030084116
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030084116 A1

TITLE: Method and apparatus for discovering data services in a distributed computer system

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|------------|-------|---------|---------|
| Musante, Mark J. | Westford | MA | US | |
| Mandal, Chhandomay | Nashua | NH | US | |
| Newman, Howard A. | Arlington | MA | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| Goosey, Melora L. | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 709/217; 709/201, 709/203

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 8. Document ID: US 20030061399 A1

L5: Entry 8 of 11

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030061399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030061399 A1

TITLE: Method and apparatus for managing data volumes in a distributed computer system

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|-------------------|------------|-------|---------|---------|
| Wagener, Peter J. | Somerville | MA | US | |

| | | | |
|---------------------|------------|----|----|
| Musante, Mark J. | Westford | MA | US |
| Mandal, Chhandomay | Nashua | NH | US |
| Goosey, Melora L. | Andover | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |
| Quill, George J. | Clinton | MA | US |
| Gratzer, Peter L. | Broomfield | CO | US |
| DaCosta, Jillian I. | Nashua | NH | US |
| France, Jonathan C. | Somerville | MA | US |

US-CL-CURRENT: 719/321; 719/328

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|--------|

☐ 9. Document ID: US 20030061366 A1

L5: Entry 9 of 11

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030061366

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030061366 A1

TITLE: Method and apparatus for managing data imaging in a distributed computer system

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|------------|-------|---------|---------|
| Musante, Mark J. | Westford | MA | US | |
| Mandal, Chhandomay | Nashua | NH | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| Zhang, Lanshan | Andover | MA | US | |
| Goosey, Melora L. | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 709/230; 709/237

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|--------|

☐ 10. Document ID: US 20030033327 A1

L5: Entry 10 of 11

File: PGPB

Feb 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030033327

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030033327 A1

TITLE: Method and apparatus for managing remote data replication in a distributed computer system

PUBLICATION-DATE: February 13, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|------------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| Musante, Mark J. | Westford | MA | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Zhang, Lanshan | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 707/204

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|--------|

☐ 11. Document ID: US 6772178 B2

L5: Entry 11 of 11

File: USPT

Aug 3, 2004

US-PAT-NO: 6772178

DOCUMENT-IDENTIFIER: US 6772178 B2

TITLE: Method and apparatus for managing remote data replication in a distributed computer system

DATE-ISSUED: August 3, 2004

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|------------|-------|----------|---------|
| Mandal; Chhandomay | Nashua | NH | | |
| Wagener; Peter J. | Somerville | MA | | |
| Musante; Mark J. | Westford | MA | | |
| DaCosta; Jillian I. | Nashua | NH | | |
| Zhang; Lanshan | Andover | MA | | |
| Pokigo; Roberta A. | Billerica | MA | | |

ASSIGNEE-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|------------------------|-------------|-------|----------|---------|-----------|
| Sun Microsystems, Inc. | Santa Clara | CA | | | 02 |

APPL-NO: 09/ 917145 [PALM]

DATE FILED: July 27, 2001

INT-CL: [07] G06 F 17/00

US-CL-ISSUED: 707/204; 707/10, 707/200, 709/217, 709/220, 709/223

US-CL-CURRENT: 707/204; 707/10, 707/200, 709/217, 709/220, 709/223

FIELD-OF-SEARCH: 707/10, 707/200, 707/204, 709/226, 709/201, 709/203, 709/217, 709/220, 709/223, 709/316, 711/162, 711/203, 714/5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| PAT-NO | ISSUE-DATE | PATENTEE-NAME | US-CL |
|---------------------|----------------|-----------------|---------|
| <u>6002085</u> | December 1999 | Utsumi et al. | 174/28 |
| <u>6058401</u> | May 2000 | Stamos et al. | 707/201 |
| <u>6453326</u> | September 2002 | Parham et al. | 707/204 |
| <u>6571232</u> | May 2003 | Goldberg et al. | 707/2 |
| <u>6625613</u> | September 2003 | Thompson | 707/102 |
| <u>2003/0014432</u> | January 2003 | Teloh et al. | 707/204 |
| <u>2003/0014433</u> | January 2003 | Teloh et al. | 707/204 |
| <u>2003/0014523</u> | January 2003 | Teloh et al. | 709/226 |
| <u>2003/0033327</u> | February 2003 | Mandal et al. | 707/204 |
| <u>2003/0061399</u> | March 2003 | Wagener et al. | 709/321 |
| <u>2003/0074446</u> | April 2003 | Musante et al. | 709/224 |
| <u>2003/0084116</u> | May 2003 | Musante et al. | 709/217 |
| <u>2003/0084198</u> | May 2003 | Mandal et al. | 709/316 |
| <u>2003/0088713</u> | May 2003 | Mandal et al. | 709/328 |
| <u>2003/0105840</u> | June 2003 | Mandal et al. | 709/220 |

OTHER PUBLICATIONS

Kyeongho et al., "Scheduling of storage and cache servers for replicated multimedia data", IEEE, pp. 484-487, 1997.*
Bhide et al., "Implicit replication in a network file server", IEEE, pp. 85-90.*
Cai et al., "A new medium access control for multi-channel Ad Hoc networks", IEEE, pp. 966-971.*
Makpangou et al., "Replicated directory service for weakly consistent distributed caches", ACN, pp1-9.*
Vason P. Srnin, "An architecture for extended abstract data flow", IEEE, pp. 303-325, 1981.
Madan et al., "A distributed real time database for heterogeneous computer control systems", IEEE, pp. 435-440, 1995.
Pu et al., "Replica control in distributed systems", ACM, pp. 377-386, 1991.

ART-UNIT: 2171

PRIMARY-EXAMINER: Corrielus; Jean M.

ATTY-AGENT-FIRM: Kudirka & Jobse, LLP

ABSTRACT:

A three-tiered data replication management system is used on a distributed computer system connected by a network. The lowest tier comprises management facade software running on each machine that converts a platform-dependent interface written in low-level kernel routines that actually perform the data replication to platform-independent method calls. The middle tier is a set of federated Java beans, which communicate with each other, with the management facades, and with the upper tier of the system. The upper tier of the inventive system comprises presentation programs that can be directly manipulated by management personnel to view and control the system. The federated Java beans can run on any machine in the system

and communicate via the network. A data replication bean runs on each host and at least one such bean communicates directly with a management interface that is controlled by a user.

22 Claims, 18 Drawing figures

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | Claims | KWC | Draw. D. |
|------|-------|----------|-------|--------|----------------|------|-----------|--|--------|-----|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|--|--------|-----|----------|

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| Term | Documents |
|---|-----------|
| API | 79964 |
| APIS | 7357 |
| (4 AND API).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD. | 11 |
| (L4 AND API).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD. | 11 |

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Search Results - Record(s) 1 through 14 of 14 returned.☐ 1. Document ID: US 20030217195 A1**Using default format because multiple data bases are involved.**

L4: Entry 1 of 14

File: PGPB

Nov 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030217195

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030217195 A1

TITLE: Method and apparatus for managing host-based data services using CIM providers

PUBLICATION-DATE: November 20, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|-----------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Cao, Lanshan | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 719/330; 709/223, 719/321

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 2. Document ID: US 20030204557 A1

L4: Entry 2 of 14

File: PGPB

Oct 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030204557

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030204557 A1

TITLE: Method and apparatus for managing remote data replication using CIM providers in a distributed computer system

PUBLICATION-DATE: October 30, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|--------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |

| | | | |
|--------------------|-----------|----|----|
| Cao, Lanshan | Andover | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |

US-CL-CURRENT: 709/202; 707/204

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

☐ 3. Document ID: US 20030172088 A1

L4: Entry 3 of 14

File: PGPB

Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030172088
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030172088 A1

TITLE: Method and apparatus for managing a data imaging system using CIM providers
in a distributed computer system

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|------------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Cao, Lanshan | Andover | MA | US | |
| France, Jonathan C. | Somerville | MA | US | |
| Du, Yuantai | Nashua | NH | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 707/200

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

☐ 4. Document ID: US 20030105840 A1

L4: Entry 4 of 14

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030105840
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030105840 A1

TITLE: Method and apparatus for managing configuration information in a distributed
computer system

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|----------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Musante, Mark J. | Westford | MA | US | |

Wagener, Peter J. Somerville MA US
Pokigo, Roberta A. Billerica MA US

US-CL-CURRENT: 709/220; 709/223

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|--------|

☐ 5. Document ID: US 20030088713 A1

L4: Entry 5 of 14

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030088713
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030088713 A1

TITLE: Method and apparatus for managing data caching in a distributed computer system

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|------------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Musante, Mark J. | Westford | MA | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |
| Goosey, Melora L. | Andover | MA | US | |

US-CL-CURRENT: 719/328

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|--------|

☐ 6. Document ID: US 20030084198 A1

L4: Entry 6 of 14

File: PGPB

May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030084198
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030084198 A1

TITLE: Method and apparatus for managing data services in a distributed computer system

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|----------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Musante, Mark J. | Westford | MA | US | |

| | | | |
|--------------------|------------|----|----|
| Wagener, Peter J. | Somerville | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |
| Goosey, Melora L. | Andover | MA | US |

US-CL-CURRENT: 719/316

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

☐ 7. Document ID: US 20030084116 A1

L4: Entry 7 of 14

File: PGPB

May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030084116
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030084116 A1

TITLE: Method and apparatus for discovering data services in a distributed computer system

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|------------|-------|---------|---------|
| Musante, Mark J. | Westford | MA | US | |
| Mandal, Chhandomay | Nashua | NH | US | |
| Newman, Howard A. | Arlington | MA | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| Goosey, Melora L. | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 709/217; 709/201, 709/203

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|---------|

☐ 8. Document ID: US 20030061399 A1

L4: Entry 8 of 14

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030061399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030061399 A1

TITLE: Method and apparatus for managing data volumes in a distributed computer system

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|-------------------|------------|-------|---------|---------|
| Wagener, Peter J. | Somerville | MA | US | |

| | | | |
|---------------------|------------|----|----|
| Musante, Mark J. | Westford | MA | US |
| Mandal, Chhandomay | Nashua | NH | US |
| Goosey, Melora L. | Andover | MA | US |
| Pokigo, Roberta A. | Billerica | MA | US |
| Quill, George J. | Clinton | MA | US |
| Gratzer, Peter L. | Broomfield | CO | US |
| DaCosta, Jillian I. | Nashua | NH | US |
| France, Jonathan C. | Somerville | MA | US |

US-CL-CURRENT: 719/321; 719/328

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 9. Document ID: US 20030061366 A1

L4: Entry 9 of 14

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030061366

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030061366 A1

TITLE: Method and apparatus for managing data imaging in a distributed computer system

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|--------------------|------------|-------|---------|---------|
| Musante, Mark J. | Westford | MA | US | |
| Mandal, Chhandomay | Nashua | NH | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| Zhang, Lanshan | Andover | MA | US | |
| Goosey, Melora L. | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 709/230; 709/237

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|------|----------|

☐ 10. Document ID: US 20030033327 A1

L4: Entry 10 of 14

File: PGPB

Feb 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030033327

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030033327 A1

TITLE: Method and apparatus for managing remote data replication in a distributed computer system

PUBLICATION-DATE: February 13, 2003

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---------------------|------------|-------|---------|---------|
| Mandal, Chhandomay | Nashua | NH | US | |
| Wagener, Peter J. | Somerville | MA | US | |
| Musante, Mark J. | Westford | MA | US | |
| DaCosta, Jillian I. | Nashua | NH | US | |
| Zhang, Lanshan | Andover | MA | US | |
| Pokigo, Roberta A. | Billerica | MA | US | |

US-CL-CURRENT: 707/204

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWC | Drawings |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|----------|

☐ 11. Document ID: US 6772178 B2

L4: Entry 11 of 14

File: USPT

Aug 3, 2004

US-PAT-NO: 6772178

DOCUMENT-IDENTIFIER: US 6772178 B2

TITLE: Method and apparatus for managing remote data replication in a distributed computer system

DATE-ISSUED: August 3, 2004

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|------------|-------|----------|---------|
| Mandal; Chhandomay | Nashua | NH | | |
| Wagener; Peter J. | Somerville | MA | | |
| Musante; Mark J. | Westford | MA | | |
| DaCosta; Jillian I. | Nashua | NH | | |
| Zhang; Lanshan | Andover | MA | | |
| Pokigo; Roberta A. | Billerica | MA | | |

ASSIGNEE-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|------------------------|-------------|-------|----------|---------|-----------|
| Sun Microsystems, Inc. | Santa Clara | CA | | | 02 |

APPL-NO: 09/ 917145 [PALM]

DATE FILED: July 27, 2001

INT-CL: [07] G06 F 17/00US-CL-ISSUED: 707/204; 707/10, 707/200, 709/217, 709/220, 709/223US-CL-CURRENT: 707/204; 707/10, 707/200, 709/217, 709/220, 709/223FIELD-OF-SEARCH: 707/10, 707/200, 707/204, 709/226, 709/201, 709/203, 709/217, 709/220, 709/223, 709/316, 711/162, 711/203, 714/5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| PAT-NO | ISSUE-DATE | PATENTEE-NAME | US-CL |
|---------------------|----------------|-----------------|---------|
| <u>6002085</u> | December 1999 | Utsumi et al. | 174/28 |
| <u>6058401</u> | May 2000 | Stamos et al. | 707/201 |
| <u>6453326</u> | September 2002 | Parham et al. | 707/204 |
| <u>6571232</u> | May 2003 | Goldberg et al. | 707/2 |
| <u>6625613</u> | September 2003 | Thompson | 707/102 |
| <u>2003/0014432</u> | January 2003 | Teloh et al. | 707/204 |
| <u>2003/0014433</u> | January 2003 | Teloh et al. | 707/204 |
| <u>2003/0014523</u> | January 2003 | Teloh et al. | 709/226 |
| <u>2003/0033327</u> | February 2003 | Mandal et al. | 707/204 |
| <u>2003/0061399</u> | March 2003 | Wagener et al. | 709/321 |
| <u>2003/0074446</u> | April 2003 | Musante et al. | 709/224 |
| <u>2003/0084116</u> | May 2003 | Musante et al. | 709/217 |
| <u>2003/0084198</u> | May 2003 | Mandal et al. | 709/316 |
| <u>2003/0088713</u> | May 2003 | Mandal et al. | 709/328 |
| <u>2003/0105840</u> | June 2003 | Mandal et al. | 709/220 |

OTHER PUBLICATIONS

Kyeongho et al., "Scheduling of storage and cache servers for replicated multimedia data", IEEE, pp. 484-487, 1997.*

Bhide et al., "Implicit replication in a network file server", IEEE, pp. 85-90.*

Cai et al., "A new medium access control for multi-channel Ad Hoc networks", IEEE, pp. 966-971.*

Makpangou et al., "Replicated directory service for weakly consistent distributed caches", ACN, pp. 1-9.*

Vason P. Srnin, "An architecture for extended abstract data flow", IEEE, pp. 303-325, 1981.

Madan et al., "A distributed real time database for heterogeneous computer control systems", IEEE, pp. 435-440, 1995.

Pu et al., "Replica control in distributed systems", ACM, pp. 377-386, 1991.

ART-UNIT: 2171

PRIMARY-EXAMINER: Corrielus; Jean M.

ATTY-AGENT-FIRM: Kudirka & Jobse, LLP

ABSTRACT:

A three-tiered data replication management system is used on a distributed computer system connected by a network. The lowest tier comprises management facade software running on each machine that converts a platform-dependent interface written in low-level kernel routines that actually perform the data replication to platform-independent method calls. The middle tier is a set of federated Java beans, which communicate with each other, with the management facades, and with the upper tier of the system. The upper tier of the inventive system comprises presentation programs that can be directly manipulated by management personnel to view and control the system. The federated Java beans can run on any machine in the system

and communicate via the network. A data replication bean runs on each host and at least one such bean communicates directly with a management interface that is controlled by a user.

22 Claims, 18 Drawing figures

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|--|--|--------|------|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|--|--|--------|------|--------|

☐ 12. Document ID: US 20030217195 A1

L4: Entry 12 of 14

File: DWPI

Nov 20, 2003

DERWENT-ACC-NO: 2004-021910

DERWENT-WEEK: 200402

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TITLE: Data service managing method for distributed computer system, involves running management facade software having common information model client in server to control provider, and federated bean

INVENTOR: CAO, L; DACOSTA, J I ; MANDAL, C ; POKIGO, R A

PRIORITY-DATA: 2002US-0147275 (May 16, 2002)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|-------------------|-------------------|----------|-------|------------|
| US 20030217195 A1 | November 20, 2003 | | 025 | G06F009/46 |

INT-CL (IPC): G06 F 9/46

ABSTRACTED-PUB-NO: US20030217195A

BASIC-ABSTRACT:

NOVELTY - The method involves running a common information model (CIM) provider (718) in a host computer system to organize a driver software for data service. A management facade software with a CIM client is run in a server to control the provider. A federated bean generates method calls to the software. Data service commands from a management terminal are provided to the bean to control the provider to organize the service.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (a) an apparatus for managing a data service in a distributed computer system
- (b) a computer program product for managing a data service in a distributed computer system.

USE - Used for managing a data service in a distributed computer system.

ADVANTAGE - The server management facade software controls the CIM provider so as to eliminate the log in of the provider into each host system.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram demonstrating the illustration of a simple data replication system using the principles of a data service managing method.

Management server system 702

Webserver 704

Federated beans 706

Management facade 708

CIM provider 718

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | MMIC | Draw. De |
|------|-------|----------|-------|--------|----------------|------|-----------|--|--|--------|------|----------|
|------|-------|----------|-------|--------|----------------|------|-----------|--|--|--------|------|----------|

☐ 13. Document ID: US 20030204557 A1

L4: Entry 13 of 14

File: DWPI

Oct 30, 2003

DERWENT-ACC-NO: 2003-900773

DERWENT-WEEK: 200382

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TITLE: Remote data replication management method in distributed computer system, involves running federated bean in management server to control common information model providers

INVENTOR: CAO, L; DACOSTA, J I ; MANDAL, C ; POKIGO, R A

PRIORITY-DATA: 2002US-0134711 (April 29, 2002)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|--------------------------|------------------|----------|-------|------------|
| US <u>20030204557 A1</u> | October 30, 2003 | | 035 | G06F017/30 |

INT-CL (IPC): G06 F 12/00; G06 F 15/16; G06 F 17/30

ABSTRACTED-PUB-NO: US20030204557A

BASIC-ABSTRACT:

NOVELTY - A management facade software running in management server, includes a common information model (CIM) client (424), for controlling CIM providers of CIM objects running in respective host devices (406). A federated bean running in server, controls the CIM providers, to configure storage devices for data replications, based on data replication commands from management terminal.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) apparatus for managing remote data replication;
- (2) remote data replication management program; and
- (3) computer data signal for managing remote data replication.

USE - For managing remote data replication in distributed computer system.

ADVANTAGE - The storage devices for data replication are easily configured by controlling the CIM providers.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the data replication system.

logic tier 402

host device 406

CIM client 424

data replication graphical user interface 446

proxy 448

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | RMC | Draw D |
|------|-------|----------|-------|--------|----------------|------|-----------|--|--|--------|-----|--------|
|------|-------|----------|-------|--------|----------------|------|-----------|--|--|--------|-----|--------|

☐ 14. Document ID: US 20030084198 A1

L4: Entry 14 of 14

File: DWPI

May 1, 2003

DERWENT-ACC-NO: 2003-606081

DERWENT-WEEK: 200357

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TITLE: Data service management method for distributed computer system, involves controlling data passing between driver software and database and retrieving data service attributes, by management facades using proxy for Java bean

INVENTOR: GOOSEY, M L; MANDAL, C ; MUSANTE, M J ; POKIGO, R A ; WAGENER, P J

PRIORITY-DATA: 2001US-0021471 (October 30, 2001)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|--------------------------|-------------|----------|-------|------------|
| <u>US 20030084198 A1</u> | May 1, 2003 | | 023 | G06F009/46 |

INT-CL (IPC): G06 F 9/46

ABSTRACTED-PUB-NO: US20030084198A

BASIC-ABSTRACT:

NOVELTY - Management facade software is executed in host (200) to control data passing between driver software and database, and to retrieve data service attributes. Each federated Java bean (230,234) is executed to generate commands to management facades (240,244). Lookup service is used to obtain proxy to each Java bean. Data is controlled and attributes are retrieved by management facades using proxy, in response to commands.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) data service managing apparatus; and
- (2) computer program product for managing data service.

USE - For managing data services such as replication, mirroring, scheduling, logging, transaction, control and data snapshots in distributed computer system

connected to Internet.

ADVANTAGE - By providing the management facades, the data services can be managed from a single location.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the data service management system.

host 200

federated Java beans 230,234

management facades 240,244

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Classified | Declassified | Claims | KWIC | Draw. Desc. |
|------|-------|----------|-------|--------|----------------|------|-----------|------------|--------------|--------|------|-------------|
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| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |
|-------|---------------------|-------|----------|-----------|---------------|

| Term | Documents |
|--|-----------|
| FEDERATED | 787 |
| FEDERATEDS | 0 |
| (1 AND FEDERATED).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD. | 14 |
| (L1 AND (FEDERATED)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD. | 14 |

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